



Missouri Department of Natural Resources

## Total Maximum Daily Load Information Sheet

### East Fork Medicine Creek

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#### Water Body Segment at a Glance:

<b>Counties:</b>	Putnam to Grundy
<b>Nearby Cities:</b>	Galt, Newtown
<b>Length of impaired segment:</b>	36 miles
<b>Pollutant:</b>	Bacteria
<b>Source:</b>	Rural Nonpoint Source
<b>Water Body ID:</b>	0619

**Note:** There is an existing TMDL for this creek for sediment, established in 2006



State Map Showing Location of Watershed

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**Scheduled for TMDL development:** 2013

#### Description of the Problem

##### Designated Beneficial uses of East Fork Medicine Creek

- Livestock and Wildlife Watering
- Protection of Warm Water Aquatic Life
- Protection of Human Health (Fish Consumption)
- Whole Body Contact Recreation – Category B

##### Use that is impaired

- Whole Body Contact Recreation – Category B

##### Standards that apply

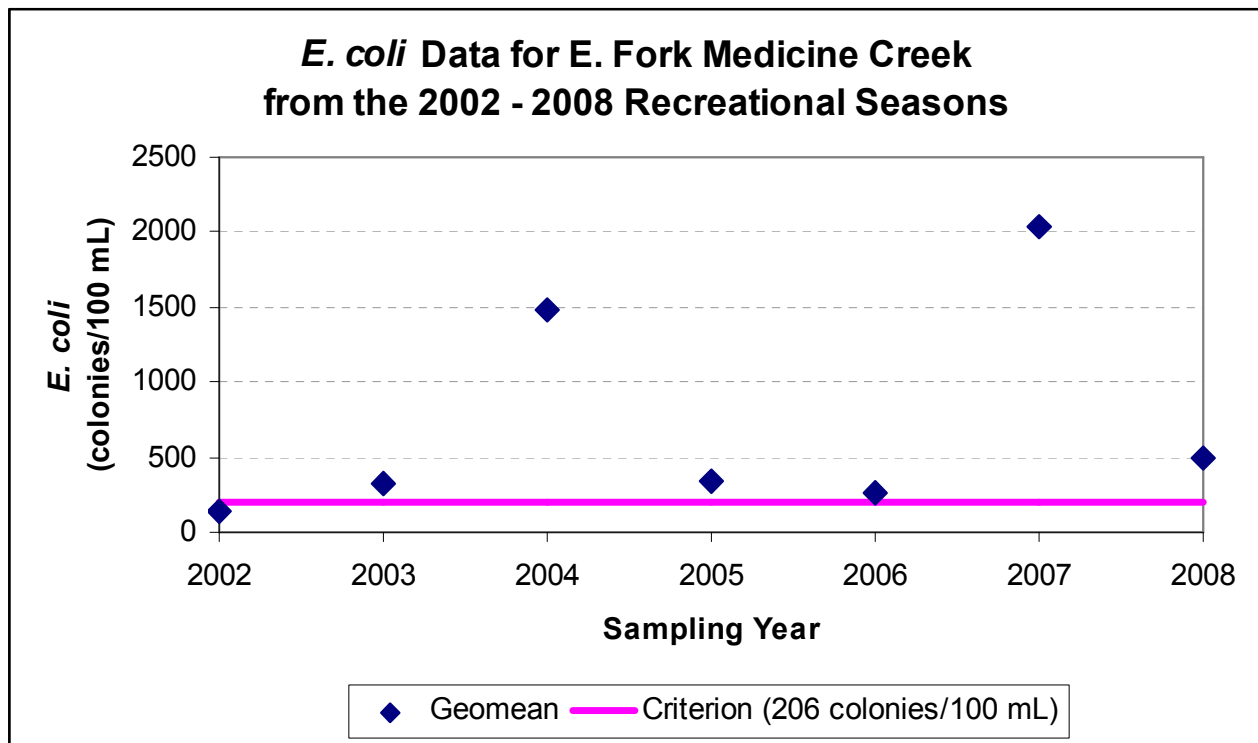
- Missouri's Water Quality Standards at 10 CSR 20-7.031(4)(C) state that the *E. coli* bacteria count shall not exceed 126 colonies per 100 milliliters of water (126 col/100 mL) for Category A and 206 col/100 mL for Category B waters. This count is the geometric mean during the recreational season (April 1- October 31) in waters designated for whole body contact recreation.

##### Background information and water quality data

The East Fork of Medicine Creek flows south to join the West Fork Medicine Creek. It is designated as Category B for the whole body contact recreation use, which means it has places deep enough for total immersion (i.e., swimming), but they may be on private lands or inaccessible to the public. The bacteria impairment is based on data collected by the U.S. Geological Survey in 2000-2008. The geometric mean for *E. coli* exceeded the criterion of 206 col/100 mL for Category B waters in every year from 2003-08.

Excessive amounts of fecal bacteria in surface water used for recreation are an indication of an increased risk of pathogen-induced illness to humans. Infections due to pathogen-contaminated waters include gastrointestinal, respiratory, eye, ear, nose, throat and skin diseases. *E. coli* are bacteria found in the intestines of warm blooded animals and are used as indicators of the risk of waterborne disease from pathogenic (disease causing) bacteria or viruses. Most *E. coli* strains are harmless, but some can cause serious illness in humans and are occasionally responsible for product recalls. The harmless strains are part of the normal flora of the intestines, and can benefit their hosts by preventing the establishment of pathogenic bacteria within the intestine<sup>1,2</sup>. Missouri's bacteria criteria are based on specific levels of risk of acute gastrointestinal illness. The levels of risk correlating to these criteria are no more than eight illnesses per 1,000 swimmers in fresh water.

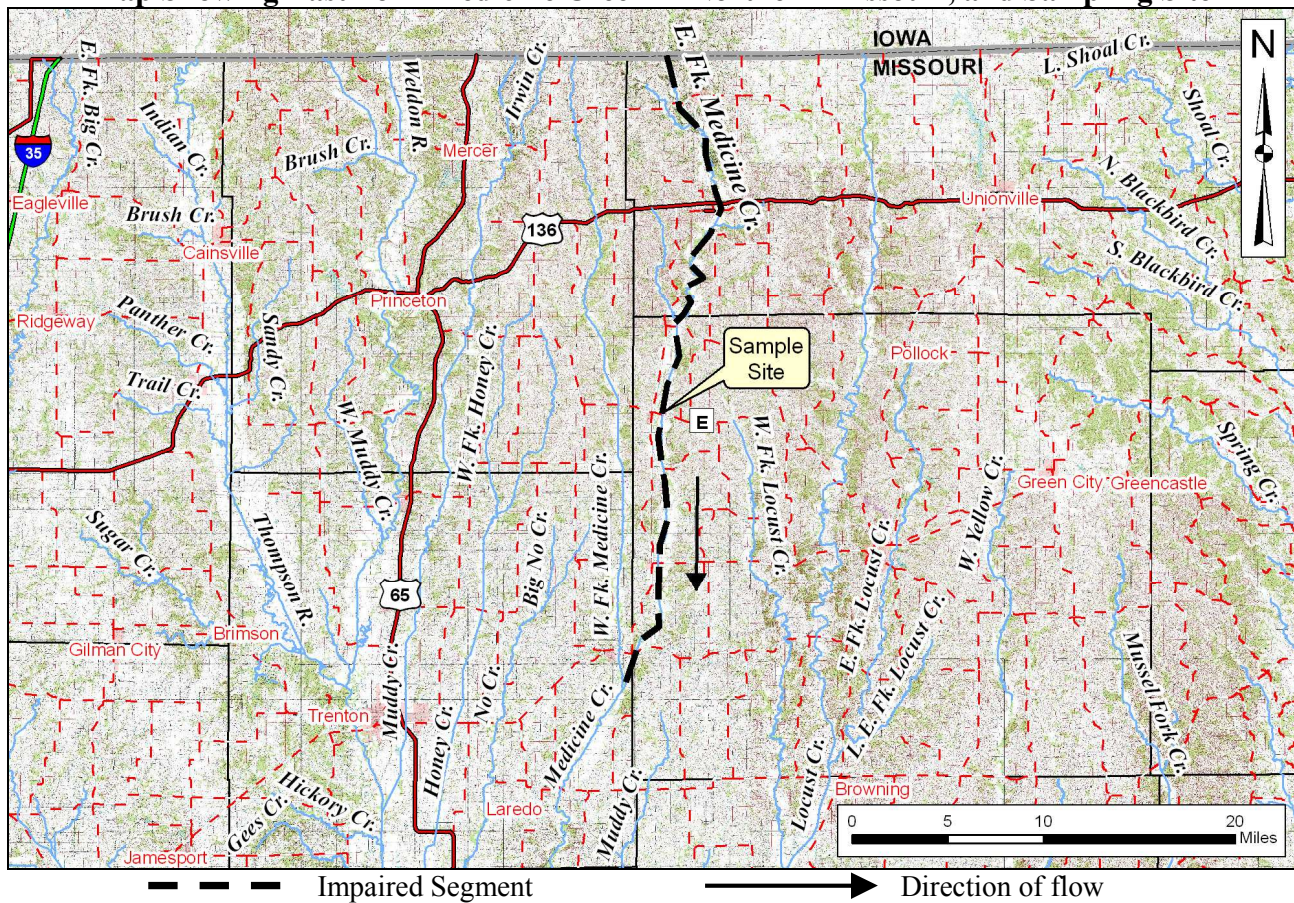
People can protect themselves from waterborne illness by avoiding contact with contaminated water. However, when swimming anywhere, it is wise to take common sense precautions. These include washing hands before eating, showering after swimming and avoiding exposure to questionable water if you have open cuts or wounds.



<sup>1</sup> Hudault S, Guignot J, Servin AL (July 2001). "[Escherichia coli strains colonising the gastrointestinal tract protect germfree mice against Salmonella typhimurium infection](#)". *Gut* **49** (1): 47–55

<sup>2</sup> Reid G, Howard J, Gan BS (September 2001). "Can bacterial interference prevent infection?". *Trends Microbiol.* **9** (9): 424–8.

**Map Showing East Fork Medicine Creek in Northern Missouri, and Sampling Site**



**Sample Site**  
East Fork Medicine Creek at State Highway E

**For more information call or write:**

Missouri Department of Natural Resources

Water Protection Program

P.O. Box 176, Jefferson City, MO 65102-0176

1-800-361-4827 or 573-751-1300 office

573-522-9920 fax

Program Home Page: [www.dnr.mo.gov/env/wpp/index.html](http://www.dnr.mo.gov/env/wpp/index.html)